

Afrotropical Asilidae (Diptera) 16. An illustrated key to the genera of the subfamily Laphriinae, a revision of *Gerrolasius* Hermann, 1920 and the description of a new genus *Pilophoneus*

by

Jason G. H. Londt

(Natal Museum, Private Bag 9070, Pietermaritzburg, 3200)

ABSTRACT

An illustrated key to the genera of Afrotropical Laphriinae is presented. The genus *Laphyctis* Loew is reinstated to accommodate all Afrotropical species previously placed in *Laphystia*. The small genus *Gerrolasius* Hermann (three species) is revised, two new species (*G. hermanni*—Mozambique; *G. oldroydi*—South Africa) being described. A new genus, *Pilophoneus*, is provided for the species *krugeri* Oldroyd, formerly placed in *Gerrolasius*.

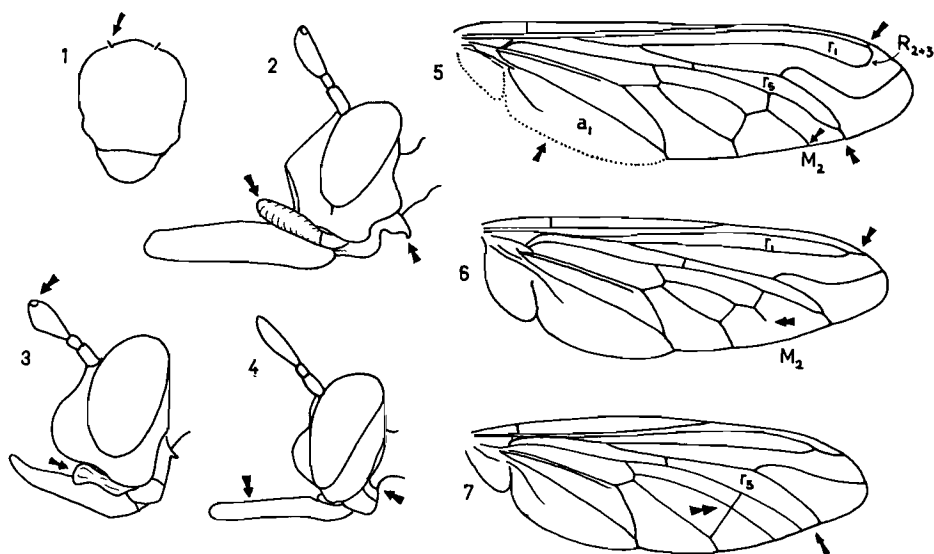
INTRODUCTION

During my efforts to identify recently collected asilid material from Somalia, the need for a new key to the Afrotropical genera of the subfamily Laphriinae (*sensu* Oldroyd, 1981) became apparent. The most recent such key was published by Oldroyd (1970) as part of his study of the Asilidae of the Congo Basin. Oldroyd's (1974) study of southern African Asilidae yielded two additional genera which he included in his 'Key to South African genera of Laphriini'. Since these useful keys were published Londt (1977, 1982) added two new genera, *Nannolaphria* and *Notiolaphria*, and included *Dichaetothyrea* de Meijere, 1914 (from Madagascar) in the Afrotropical fauna complement. Other factors which have led me to publish a new key are as follows: 1. A reassessment of the species placed in *Gerrolasius* Hermann, 1920 has led me to place *G. krugeri* Oldroyd, 1974 in a genus of its own. 2. A reassessment of the Afrotropical species placed in *Laphystia* Loew, 1847 has led me to the opinion that these are not congeneric and should be placed in a genus of their own. 3. Previous keys failed to provide adequate means of separating certain of the genera.

This paper is divided into two parts. 1. The presentation of a new key to the genera of Afrotropical Laphriinae. 2. A revision of the small genus *Gerrolasius* and the description of a new genus, *Pilophoneus*. All material belongs to the Natal Museum except where indicated.

KEY TO THE AFROTROPICAL GENERA OF LAPHRIINAE

The following key has not been based on any previously published one. Although I have made use of characters used by other authors, I have been more critical in their application. The key is followed by some comments on the taxa or the characters used in their separation (these being marked with appropriate superscripts). Nomenclature follows McAlpine (1981).



Figs 1-7. Some key features used to identify genera of Laphriinae. 1. Dorsal aspect of mesonotum of *Goneccalypsis* showing position of anterior dorsocentral bristles. 2. Head of *Lamrya* showing cylindrical palp and lower occipital projection. 3. Head of *Proagonistes* showing leaf-like palp and antenna lacking microsegment. 4. Head of *Choerades* showing laterally compressed knife-like rostrum and absence of occipital flange. 5. Wing of *Hoplistomerus* showing cell r_1 close to margin, anteriorly bent vein R_{2+3} , closed cell r_s , vein M_1 reaching margin and lack of vein bordering cell a_1 . 6. Wing of *Ctenota* showing closed cell r_s and vein M_2 not reaching margin. 7. Wing of *Orthogonis* showing open cell r_s and cross formed by vein M_3 and proximal portion of M_2 . (Outlines of wings redrawn from Hull, 1962.)

- 1 Postmetacoxal area membranous; anatergal bristles absent Tribe Laphriini (excluding *Katharma*) 5
- Postmetacoxal area sclerotised (ie. posterior edges of metepimera extend posteromedially and fuse forming a postmetacoxal bridge); 2 or more black anatergal bristles present 2
- 2 Small to tiny flies (< 10 mm); fourth antennal segment (microsegment) present; anterior margin of mesonotum with a pair of small proclinate bristles (eg. Fig. 1^A) Tribe Atomosiini^B 3
- Larger flies (> 10 mm); microsegment absent; anterior margin of mesonotum lacking well-developed dorsocentral bristles *Katharma* Oldroyd, 1960^C
- 3 Fourth antennal segment (microsegment) longer than first (scape); occipital bristles poorly developed *Dichaetothyrea* de Meijere, 1914
- Fourth antennal segment shorter than first; occipital bristles well developed 4
- 4 Ratio of width of one eye (in anterior view): width of face > 1,5; mesonotum punctate; mystax of both sexes lacking dorsoventrally flattened scale-like bristles *Loewinella* Hermann, 1912
- Ratio of width of one eye: width of face < 1,5; mesonotum shiny with at most a few shallow punctations; mystax of males with dorsoventrally flattened, shiny scale-like bristles *Goneccalypsis* Hermann, 1912
- 5 Antennal segment 4 (microsegment) present (eg. Figs 8-10) 6
- Antennal segment 4 absent (eg. Fig. 3) 13

- 6 Cell r_1 (marginal) open (eg. Fig. 15) 7
- Cell r_1 closed and stalked (eg. Fig. 6) 10
- 7 Pulvilli poorly developed (*ca* half length of claws).... **Prytania** Oldroyd, 1974
- Pulvilli well developed (as long as or a little shorter than claws)..... 8
- 8 Anepisternum with strong bristle on posterior margin (eg. Fig. 11); small (< 8 mm); face narrower than width of one eye in anterior view (eg. Fig. 14); first antennal segment twice length of second (eg. Fig. 8)
Gerrolasius Hermann, 1920
- Anepisternum lacking obvious strong bristle on posterior margin; larger (> 8 mm); face as wide or wider than width of one eye (eg. Fig. 22); first antennal segment at most 1,5 times length of second (eg. Fig. 23) 9
- 9 Mystax with strong bristles on forwardly projecting lower facial margin; fine setae of thorax and abdomen tiny; thoracic and abdominal bristles obvious and moderately well developed **Laphytis** Loew, 1858
- Mystax composed entirely of fine setae uniformly covering face; fine setae of thorax and abdomen longish and soft; no obvious bristles anywhere; bee-like flies usually with r_5 closed on or before margin^D **Pilophoneus** gen. n.
- 10 Cell r_5 (1st posterior) closed and stalked (eg. Fig. 5) 11
- Cell r_5 open (eg. Fig. 7) 12
- 11 Palpi bulbous (almost spherical); mystax with fine setae only
Afromelittodes Oldroyd & Bruggen, 1963
- Palpi not markedly bulbous; mystax with strong bristles **Nusa** Walker, 1851
- 12 Pulvilli absent; anepisternum lacking bristles on posterior margin
Anypodetus Hermann, 1907
- Pulvilli present; anepisternum with strong bristles on posterior margin
Laphystotes Oldroyd, 1974
- 13 Vein R_{2+3} bent anteriorly at tip and joining vein R_1 just before or at vein C^E (eg. Fig. 5); cell r_5 always closed; scutellum lacking marginal bristles ... 14
- Cell r_1 joined to costa by an obvious, fairly straight stalk (eg. Fig. 6); cell r_5 open or closed; scutellum with or without marginal bristles 16
- 14 Anepisternum with strong bristles on poster margin; hind femur stout, frequently with ventral tubercles^F; cell a_1 (anal cell) not bordered by vein C (eg. Fig. 5) 15
- Anepisternum without strong bristles on posterior margin; hind femur slender, without ventral tubercles; entire hind margin of wing bordered by weak vein C **Perasis** Hermann, 1905
- 15 Antennal segment 3 almost twice as long as first 2 combined^G; larger species (> 13 mm); hind femur with ventral tubercles; wings with patches of yellow-brown staining **Hoplistomerus** Macquart, 1938
- Antennal segment 3 only a little longer than first 2 combined; smaller species (< 13 mm); hind femur with or without ventral tubercles; wing usually lacking staining **Trichardis** Hermann, 1906

- 16 Apical portion of vein M_3 perfectly aligned with proximal portion of vein M_2 (forming a cross)^H (eg. Fig. 7) (Madagascar) ... **Orthogonis** Hermann, 1914
 — Wing veins not so aligned 17
- 17 Proboscis long, narrow and laterally compressed (knife-like) (eg. Fig. 4) ... 18
 — Proboscis short to moderate in length and more triangular in cross-section (eg. Fig. 14) 20
- 18 Antennal segment 3 at most twice as long as first 2 segments combined; ♀ ovipositor shortish and not markedly tubular **Chorades** Walker, 1851^I
 — Antennal segment more than twice as long as first 2 segments combined; ♀ ovipositor somewhat elongate and tubular 19
- 19 Fairly slender, not particularly hairy flies; scutellum with short setae only (few poorly developed marginal bristles may be present); hind femur with ventral setigerous tubercles **Storhynghomerus** Hermann, 1919
 — Robust hairy flies; scutellum with long hairs and bristles; hind femora without setigerous tubercles^J **Dasyllina** Bromley, 1935
- 20 Palpi laterally compressed and leaf-like (eg. Fig. 3); ♀ ovipositor projecting distally as a slender tube 21
 — Palpi cylindrical in cross-section (eg. Fig. 2); ♀ ovipositor short and not markedly tubular 24
- 21 Cell r_5 closed (eg. Fig. 5); broad bee-like flies (mimic carpenter bees of the genus *Xylocopa*) **Hyperechia** Schiner, 1866
 — Cell r_5 open (eg. Fig. 7) 22
- 22 Face strongly protuberant; antennal segment 3 about one and a half times length of segments 1 + 2 combined 23
 — Face only slightly protuberant; antennal segments 1 + 2 approximately equal in length to segment 3 **Andrenosoma** Rondani, 1856
- 23 Large species (> 20 mm); mesonotum blackish (sometimes with red-brown lateral parts) **Proagonistes** Loew, 1858
 — Smaller species (< 20 mm); mesonotum brown-yellow to reddish and covered with golden pile^J **Systropalpus** Hull, 1962
- 24 Vein M_2 not reaching wing margin (eg. Fig. 6) **Ctenota** Loew, 1873
 — Vein M_2 reaching wing margin (eg. Fig. 5) 25
- 25 Posterior margin of lower occiput with well-developed flange-like projection (seen in lateral aspect) (eg. Fig. 2) 26
 — Posterior margin of lower occiput not extended and flange-like (eg. Fig. 4) 27
- 26 Hind legs greatly elongate (hind femur about twice as long as mid-femur); abdomen somewhat constricted in anterior half; larger species (ca 22–35 mm) **Lamyra** Loew, 1851
 — Hind legs normally proportioned (hind femur no more than one and a half times as long as mid-femur); abdomen more or less parallel-sided and not noticeably constricted; smaller species (ca 10–27 mm)
Stiphrolamyra Engel, 1928

- 27 Cell r_5 closed; antennal segment 3 with numerous well-developed setae dorsally, segment 1 usually *ca* twice length of 2; femora usually stout; often rather bee-like in appearance **Laxenecera** Macquart, 1838
- Cell r_5 open; antennal segment 3 with at most one or two poorly developed setae dorsally, segment 1 usually only a little longer than 2; femora usually rather slender; not bee-like 28
- 28 Antennal segment 3 twice as long as 1 and 2 combined; fairly large (> 20 mm) pale coloured flies. **Smeryngolaphria** Hermann, 1912
- Antennal segment 3 shorter than 1 and 2 combined; fairly small shiny black flies (< 15 mm) 39
- 29 Mystax overlaid by shiny gold scale-like setae; proximal half of wing transparent, distal half uniformly covered with black microtrichia **Notiolaphria** Londt, 1977
- Mystax not overlaid by shiny scale-like setae; entire wing membrane covered with black microtrichia **Nannolaphria** Londt, 1977

Comments on some key characters

- A. The importance of this character was emphasised by Londt (1982) in a revision of the Afrotropical Atomosiini. Nagatomi & Imaizumi (1986) have, however, said that these setae 'appear to be absent in *Goneccalys lucida*' the only species of the genus to occur outside the Afrotropical region.
- B. The key provided for genera of Atomosiini is identical to that previously published by Londt (1982).
- C. Although *Katharma* has been listed under the Laphriini (Oldroyd 1980) it retains some plesiomorphic features, such as a postmetacoxal bridge and anatergal bristles, and is, therefore, unlike all other Afrotropical genera of Laphriini. These plesiomorphic characters are found in the Atomosiini suggesting that *Katharma* may be more closely allied to members of this tribe or perhaps to the oriental Laphriinae (with which I am largely unfamiliar).
- D. Only one of the specimens studied has cell r_5 open.
- E. This character state is commonly used to key the Tribe Laphystiini. Loew (1860:159) used the absence of this feature in his definition of *Laphyctis* Loew, 1858 (type-species *Stichopogon gigantella* Loew, 1852) a genus subsequently synonymised with *Laphystia* Loew, 1847 (type-species *L. sabulicola* Loew, 1847, by monotypy—a Palearctic species). Hull (1962) used the same argument in establishing his subgenus *Laphystiella* (with *Laphystia argenteofasciata* Engel, 1929—a synonym of *gigantella*—as genotype). I support the view that Afrotropical species do not belong in *Laphystia* and therefore consider that *Laphyctis* Loew, 1858 **stat. rev.** should be fully reinstated (with subgenus *Laphystiella* Hull **syn. n.** being synonymous). The consequence of this action produces the following **new combinations**: *Laphyctis albicans* (Engel, 1932); *Laphyctis kochi* (Lindner, 1973); *Laphyctis orichalcea* (Lindner, 1973). The latter two species were omitted from the Afrotropical Diptera Catalogue.
- F. An intraspecifically inconsistent feature in *Trichardis*, a genus requiring a modern revision.
- G. A new character to separate *Hoplistomerus* and *Trichardis*; genera traditionally difficult to distinguish from each other. I have not seen all species so do not know if there are some exceptions to this rule.

- H. Representatives not studied. This venational feature is found in species of *Anypodetus* and in Afrotropical genera of the Atomosiini.
- I. Londt (1977) discussed the problems associated with the characterisation of *Laphria* Meigen, 1800 and *Choerades*, and transferred six southern African species to *Choerades*. A detailed examination of the male genitalia of all the other Afrotropical species requires to be undertaken in order to establish if any true *Laphria* are found in the region.
- J. Representatives not studied; data from Hull (1962).

Comments on status of Laphriinae as a subfamily

The arrangement of the Asilidae into subfamilies and tribes has had a long history (Papavero, 1973). In his preliminary classification of the Asilidae in subfamilies, Papavero presented an arrangement somewhat different to that which Oldroyd used. As Papavero's ideas have not as yet drawn much support, and I myself do not have confidence in the proposals, I have decided to continue to adopt the classification and arrangement of genera used by Oldroyd (1981) even though this may eventually be shown to be inadequate.

One of Papavero's (1973) innovations was to elevate Hardy's (1948) tribe Laphystiini to subfamilial status. In this subfamily he placed the following Afrotropical genera: *Anypodetus*, *Gerrolasius*, *Hoplistomerus*, *Laphysia*, *Perasis* and *Trichardis*. A study of Papavero's key and subfamilial diagnoses reveals that there is only one character of any real importance in separating the Laphystiinae from the Laphriinae. The Laphriinae have the 'marginal cell [cell r_1] closed and petiolate' while the Laphystiinae have it 'open or closed' and the 'anterior branch of R_4 strongly sigmoid and recurrent'. Other characters listed are either the same for the two subfamilies or there is inconsistency. While the venational character may be adequate to characterise the Laphriinae, the Laphystiinae is left with two different wing forms, the completely open cell r_1 (present in the Afrotropical genera *Prytania*, *Gerrolasius*, *Laphycitis* and *Pilophoneus*) and the closed r_1 where veins R_{2+3} and R_4 are recurrent (including *Perasis*, *Hoplistomerus* and *Trichardis*)¹. These two groups within the Afrotropical representatives of Papavero's Laphystiinae are quite distinctive and one could argue that each should have subfamilial status. While I would be unwilling, at least on present evidence, to make this kind of distinction, I cannot accept Papavero's arrangement. Instead I prefer to retain all the genera in the single subfamily Laphriinae as did Oldroyd.

REVISION OF *GERROLASIUS* AND DESCRIPTION OF *PILOPHONEUS*

Gerrolasius Hermann, 1920

Gerrolasius Hermann, 1920: 189. Type-species: *meridionalis* Hermann, 1920 by original designation and monotypy.

Diagnosis: Small, darkly coloured Laphriinae with the following combination of characters: *Head:* First antennal segment twice length of second; face narrower than width of one eye in anterior view; mystax with some well-developed bristles

¹ It should be noted that Papavero's inclusion of *Anypodetus* in his Laphystiinae is incorrect as all species have a closed and petiolate cell r_1 which would place the genus in his Laphriinae.

in lower part. *Thorax*: Anepisternum partly shiny and apruinose, with strong bristle on hind margin; pulvilli well developed; cells r_1 and r_5 of wing open; vein C extends around wing margin until vein A_1 , cell a_1 without bordering vein. *Abdomen*: Terga punctate; with silver pruinescence on hind margins.

Key to species of *Gerrolasius*

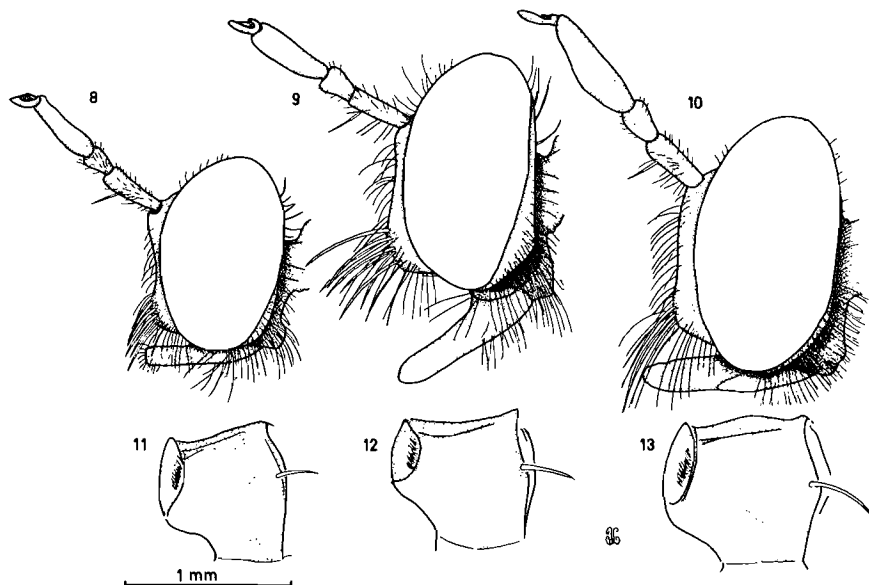
- 1 Vertex entirely gold pruinose; anepisternum extensively pruinose (Figs 12–13) 2
- Vertex mostly shiny black except for fine silver pruinescence adjacent to eye margins; anepisternum less extensively pruinose (Fig. 11). . . . *hermanni* sp. n.
- 2 Scutellum lacking marginal bristles; postalar bristles absent; wings yellow-brown stained; T6 orange-brown, contrasting with T1–5 *oldroydi* sp. n.
- Scutellum with 4 marginal bristles; one postalar bristle present; wings not markedly stained; all terga similarly coloured (T6 may have brownish hind margin) *meridionalis* Hermann, 1920

Gerrolasius hermanni sp. n.

Figs 8, 11, 14–17.

Description: Based on holotype ♂.

Head: Antenna (Fig. 8) dark red-brown, segment 4 (microsegment) brown-orange; segment 1 twice length of 2, segments 1 + 2 about equal to 3 + 4; segments 1 and 2 with fine pale white setae (a single bristle ventrally on 1); segment 4



Figs 8–13. *Gerrolasius* species. 8–10. Head, lateral aspect. *G. hermanni* sp. n. 9. *G. meridionalis* Hermann, 1920. 10. *G. oldroydi* sp. n. 11–13. Anepisternum, right side, showing distribution of pruinescence (stippled). 11. *G. hermanni*. 12. *G. meridionalis*. 13. *G. oldroydi*. Holotypes of *hermanni* and *oldroydi* illustrated.

with dorsal, subbasal pit enclosed spine. Eyes large, each wider than face in anterior aspect (Fig. 14). Face silver pruinose, slightly protruding in lower part (Fig. 8); mystacial bristles moderately well developed and confined to centre of protuberance just above lower facial margin; antennae mounted on definite dorsal protuberance. Vertex shiny black, silver pruinose adjacent to eye margins; ocellarium prominent, without strong ocellar bristles. Occiput silver pruinose, with pale white setae and bristles. Rostrum dark brown, shortish, protruding a little beyond level of lower facial margin. Palpi dark brown, tiny.

Thorax: Shiny black with areas of silver pruinescence laterally. Mesonotum shiny black with tiny silvery setae arising from shallow punctations. Lateral bristles pale yellow; 1 npl (notopleural), 2 spal (supra-alars), pal (postalars) absent. Scutellum shiny black with fine silvery setae, marginal bristles absent. Anepisternum with strong yellowish bristle on hind margin and silver pruinescence arranged in pattern illustrated (Fig. 11). Anaterga silver pruinose, apilose. Postmetacoxal area membranous. Halteres yellow. Legs: Femora dark red-brown with distal tips brown-yellow; tibiae and tarsi orange-brown; all setae and bristles pale yellow-white; pulvilli well developed. Wing (Fig. 15): Length (from humeral crossvein to tip) 3,5 mm; cells r_1 and r_5 open; vein C extends along wing margin as far as $Cu_2 + A_1$, leaving cell a_1 without bordering vein; membrane unstained, iridescent, extensively covered with microtrichia giving wing greyish appearance.

Abdomen: Terga shiny black, punctate; hind margins laterally narrowly silver pruinose; setae fine, short, pale white. Sterna brown, hind margins yellow; apunctose; setae longish, pale yellow-white. ♂ genitalia as illustrated (Fig. 16–17); orange-brown, rotated through 180°, largely hidden beneath T6.

Paratypes: 5♂ 2♀ similar to holotype. ♀ slightly larger (wing length ca 4,5 mm); ovipositor poorly developed.

Material examined: MOZAMBIQUE: Port East Africa, 6♂ (holotype & paratypes) 1♀ (paratype), Marromeu (18°17'S:35°56'E), Lower Zambezi River, xi. 1957, P. J. Usher; 1♀ (paratype), Luabo (18°23'S:36°07'E), Lower Zambezi River, ix. 1957, P. J. Usher. Natal Museum Type No. 1.

Gerrolasius meridionalis Hermann, 1920

Figs 9, 12, 18–19.

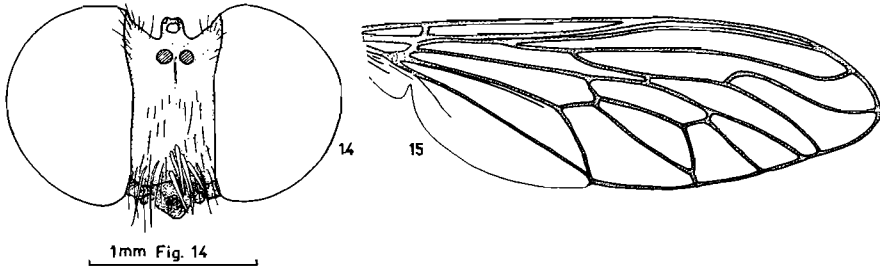
Gerrolasius meridionalis Hermann, 1920: 190; Hull, 1962: 83; Oldroyd, 1974: 93; Oldroyd, 1981: 350.

Redescription: Based on listed material. Resembles *hermanni* except for the following features.

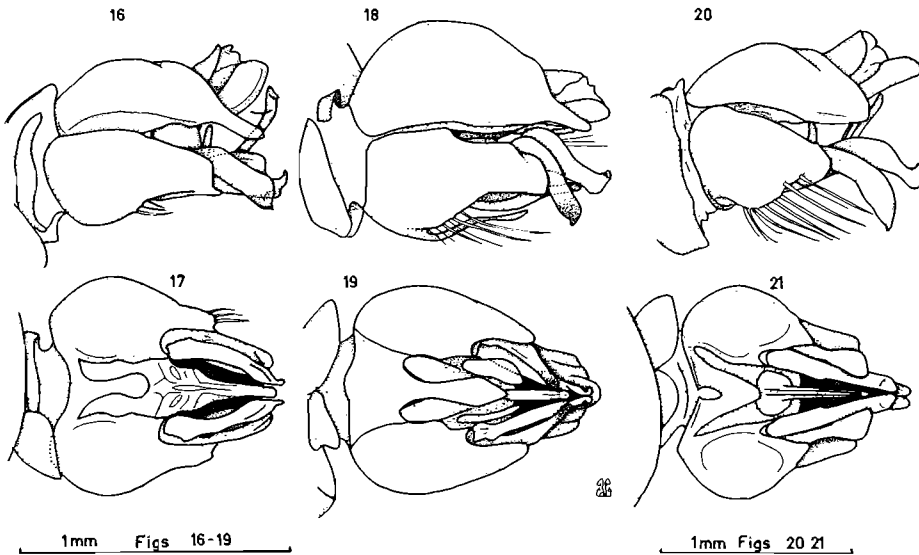
Head: Antennal segment 4 dark red-brown. Face gold pruinose, less protuberant than *hermanni* (Fig. 9). Vertex uniformly and densely gold pruinose.

Thorax: Mesonotum with moderately well-developed golden setae. 2 npl, 2 spal, 1 pal. Anepisternum more extensively pruinose (Fig. 12). Scutellum with 4 yellowish marginal bristles. Wing length 3,9 mm & 3,6 mm (♂s), 4,3 mm & 3,7 mm (♀).

Abdomen: Terga and sterna unicolorous dark red-brown to black. T1–4 of ♂ with discal bristles. ♂ genitalia as illustrated (Figs 18–19).



Figs 14–15. *Gerrolasius hermanni* sp. n. 14. Head, anterior aspect. 15. Wing. Holotype illustrated.



Figs 16–21. *Gerrolasius* male genitalia, lateral and ventral aspects. 16–17. *G. hermanni* sp. n. 18–19. *G. meridionalis* Hermann, 1920. 20–21. *G. oldroydi* sp. n. Holotypes of *hermanni* and *oldroydi* illustrated.

Material examined: SOMALIA: 2♂, Doy Gob (02°55'N:43°51'E), 27.xii.1985, R. Lavigne. SOUTH AFRICA: *Transvaal*: 2♀, Kruger Park, Mazithi Dam, Grassland 10 km north of Tshokwane (2431Db), 6.i.1974, B. & P. Stuckenberg.

***Gerrolasius oldroydi* sp. n.**

Figs 10, 13, 20–21.

Description: Based on holotype ♂. Resembles *hermanni* except for the following features.

Head: Antennal segment 4 dark red-brown; segment 1 a little less than twice length of 2 (Fig. 10). Face gold pruinose, almost plane in lower part (Fig. 11). Vertex uniformly and strongly gold pruinose.

Thorax: Mesonotum with moderately well-developed golden setae. 2 npl, 3–4 spal. Anepisternum more extensively pruinose (Fig. 13). Wing length 4,8 mm, membrane stained yellow-brown, more extensively covered with microtrichia.

Abdomen: T6 (last major terminal tergum) orange-brown, contrasting with darker proximal terga. ♂ genitalia as illustrated (Figs 20–21).

Paratypes: 1 ♀ similar to ♂; T6 with distal end red-brown.

Material examined: SOUTH AFRICA: *Transvaal*: 1 ♂ (holotype), Capricorn Private Nat. Reserve (2329CB) 28 km S Dendron, 25.i.1978, J. G. H. Londt, Grass & bushveld near dam. BOTSWANA: 1 ♀ (paratype), Farmers Brigade 5 km SE of Serowe (SE 2226BD), 3.xii.1985, P. Forchhammer, Hillside N slope Malaise trap. Natal Museum Type No. 2.

Pilophoneus gen. n.

Type species: *Gerrolasius krugeri* Oldroyd, 1974: 93, by monotypy and present designation.

Etymology: Gr. m. *pilos*—hair, *phoneus*—murderer, meaning hairy murderer (refers to pilosity of this predator).

Diagnosis: Medium-sized Laphriinae with most of body covered with moderately long shiny setae. **Head:** Antennal segment 2 *ca* two-thirds length of 1; face gently protruding, pruinose; mystax composed of fine shiny setae entirely covering face. **Thorax:** Anepisternum entirely pruinose and lacking strong bristle on hind margin; cell r_5 usually closed and stalked. **Abdomen:** Terga finely punctate, completely lacking pruinescence.

***Pilophoneus krugeri* (Oldroyd, 1974). Comb. n.**

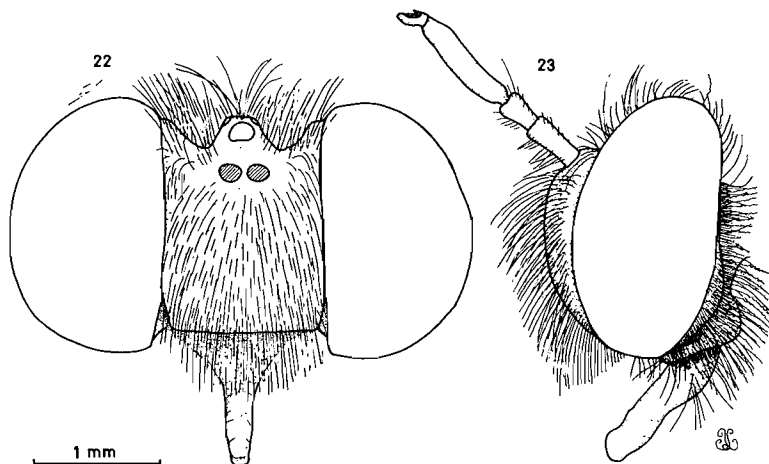
Figs 22–27.

Gerrolasius krugeri Oldroyd, 1974: 93; Oldroyd, 1981: 350.

Redescription: Based on Blouberg ♂.

Head: Antenna (Fig. 23) dark red-brown, segment 3 red-brown; segment 2 *ca* two-thirds length of 1, segment 3 somewhat longer than 1 + 2; segments 1 and 2 with fine golden setae (no obvious bristles). Eyes large, each *ca* as wide as face in anterior aspect (Fig. 22). Face gold pruinose, gently protruding (more prominent in upper part) (Fig. 23). Mystax composed entirely of soft, moderately long, golden setae covering entire face; antennae not mounted on definite protuberance. Vertex fine gold pruinose with long golden setae; ocellarium prominent; without strong ocellar bristles. Occiput silver pruinose, with golden setae. Rostrum and palpi dark red-brown with golden setae.

Thorax: Mesonotum shiny black; gold pruinose lateral margins; setae short to moderately long, golden. Lateral bristles seta-like and difficult to count amongst other setae. Scutellum shiny black with fine golden setae, marginal bristles not obvious. Pleura uniformly gold pruinose; anepisternum lacking obvious strong bristle on hind margin; anaterga fine silver pruinose, apilose. Postmetacoxal area membranous. Halteres honey-yellow. Legs: Dark red-brown except for hind tibiae and dorsal aspects of fore- and mid-tibiae which are yellow; all setae and bristles golden; pulvilli well developed. Wing: Length (from humeral crossvein to tip)



Figs 22–23. *Pilophoneus krugeri* (Oldroyd, 1974), head. 22. Anterior. 23. Lateral.

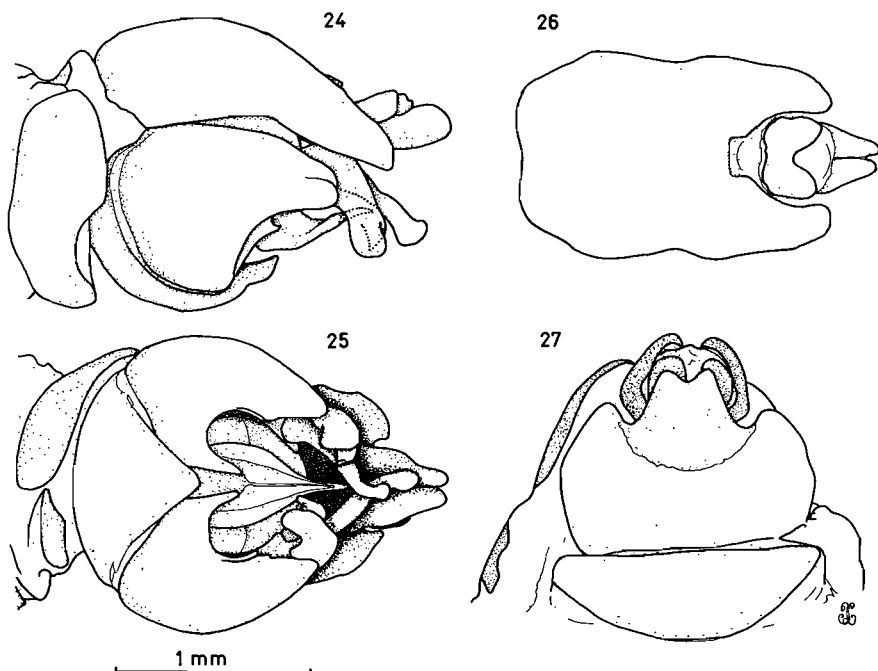
5.9 mm; cell r_1 open, cell r_5 closed and stalked; vein C extends along wing margin as far as $Cu_2 + A_1$, and then weakly along margin of cell a_1 ; membrane brown-yellow stained; extensively covered with microtrichia.

Abdomen: Shiny black, finely punctate, apruinose; setae golden, shortish mid-dorsally, long laterally and ventrally, no obvious bristles. ♂ genitalia as illustrated (Figs 24–26); dark brown, rotated through 180° , largely hidden beneath T6.

Female: Similar to ♂ but gold pruinose areas are silver, and golden setae are silver. Antennal segments 2 and 3 orange-brown. Kruger Park ♀ with cell r_5 narrowly open at margin. ♀ genitalia as illustrated (Fig. 27).

Material examined: SOUTH AFRICA: *Transvaal*: 1♂, Blouberge, 10 km NW Vivo (2229CC), 25.i.1978, J. G. H. Londt, mountain base/grass bushveld; 1♀, Ben Alberts Nat. Res., Thabazimbi $34^\circ 37'S:27^\circ 23'E$, 24–28.xi.1980, M. W. Mansell; 1♀, 30 km SE Hoedspruit (2431AC), 30.ix.1978, Brothers & J-Guillarmod; 1♂, Kruger Park, Mazithi Dam—grassland 10 km N Tshokwane (2431DB), 6.i.1974, B. & P. Stuckenberg; 1♀, Kruger National Park, Satara Rest Camp, 2431Bd, 5.ii.1988, A. E. Whittington, at evening light trap on boundary of camp, warm & clear with a slight breeze 21h30; 1♀ Kruger Nat. Park, Balule, $24^\circ 03'S:31^\circ 44'E$, 262 m, 18.i.1985, M. W. Mausell (National Collection of Insects, Pretoria). *Natal*: 1♀, Ndumu dist. Zululand (2632CD), 1–10.xii.1963, B. & P. Stuckenberg.

Remarks: Oldroyd's (1974) description is inadequate. The species is merely differentiated in four lines of a key and no illustrations are given. He states 'Type in Pretoria' but I failed to discover it in either the Diptera collection of the Transvaal Museum (now forming part of the Natal Museum collection) or the National Collection of Insects. Although the number and sexes of specimens studied is not stated, Oldroyd examined material from two localities in the Kruger National Park; Sabie Gorge (type-locality) and Punda Milia (now Punda Maria). Despite not having located or studied the types I am confident that the material listed



Figs 24–27. *Pilophoneus krugeri* (Oldroyd, 1974), genitalia. 24–26. Male. 24. Lateral. 25. Ventral. 26. Epandrium dorsally. 27. Female, ventral aspect.

above is conspecific. When provisionally allocating *krugeri* to *Gerrolasius* Oldroyd stated that he felt it probable that a new genus would be required for it. Now that I have seen three valid species of *Gerrolasius* I am in no doubt that Oldroyd was correct.

ACKNOWLEDGEMENTS

Thanks are extended to Prof. Robert Lavigne for providing the specimens of Asilidae from Somalia which stimulated this paper; Mrs Annette Seymour for technical assistance; Dr Brian Stuckenberg for discussions and for commenting on the manuscript; the Council for Scientific and Industrial Research for the award of a Comprehensive Research Grant.

REFERENCES

- HARDY, G. H. 1948. On classifying Asilidae. *Entomologists Monthly Magazine* **84**: 116–119.
 HULL, F. M. 1962. Robber flies of the World. The genera of the family Asilidae. *Bulletin of the United States National Museum* **224**: 1–907 (2 parts).
 LINDNER, E. 1973. Zur Kenntnis der Dipteren-Fauna Sudwestaf[r]ikas, II. S.W.A. *Wissenschaftliche Gesellschaft* **1972/73**: 73–86.
 LOEW, H. 1858. Betrag till k nnedomen on Afrikas Diptera [part]. * fversigt af Kongl. Vetenskaps-Akademiens F rhandlingar* (Stockholm) **15**:335–341.
 ———. 1860. Die Dipteren-Fauna Sudafrica's. Erste Abtheilung. *Abhandlungen des Naturwissenschaftlichen Vereins f r Sachsen und Th ringen in Halle* **2** (1858–1861):57–402.
 LONDI, J. G. H. 1977. Afrotropical Asilidae (Diptera) 1. The genus *Choerades* Walker, 1851 and the descriptions of two new genera, *Nannolaphria* and *Notiolaphria*, from southern Africa and Malagassy Republic. *Annals of the Natal Museum* **23**(1): 43–55.

- 1982. Afrotropical Asilidae (Diptera) 6. The tribe Atomosiini (Laphriinae). *Annals of the Natal Museum* 25(1): 221–240.
- MCALPINE, J. F. 1981. *Manual of Nearctic Diptera*. Volume 1. Chapter 2. Morphology and terminology—Adults. Research Branch Agriculture Canada. Monograph No. 27. pp. 9–63.
- NAGATOMI, A. & IMAIZUMI, H. 1986. Redescription of *Goneccalypsis lucida* (Diptera, Asilidae). *Memoirs of the Kagoshima University Research Center for the South Pacific* 7(2): 106–118.
- OLDROYD, H. 1970. Studies of African Asilidae (Diptera) 1. Asilidae of the Congo Basib. *Bulletin of the British Museum (Natural History) (Entomology)* 24(7): 209–334.
- 1974. An introduction to the Robber Flies (Diptera: Asilidae) of Southern Africa. *Annals of the Natal Museum* 22(1): 1–171.
- PAPAVERO, N. (1973). Studies of Asilidae (Diptera) systematics and evolution. I. A preliminary classification in subfamilies. *Arquivos de Zoologia* 23(3): 217–274.

Accepted 22 October 1987.